

Tunable Single Frequency 2.05 Micron Fiber Laser Using New Ho-Doped Fiber, Phase II

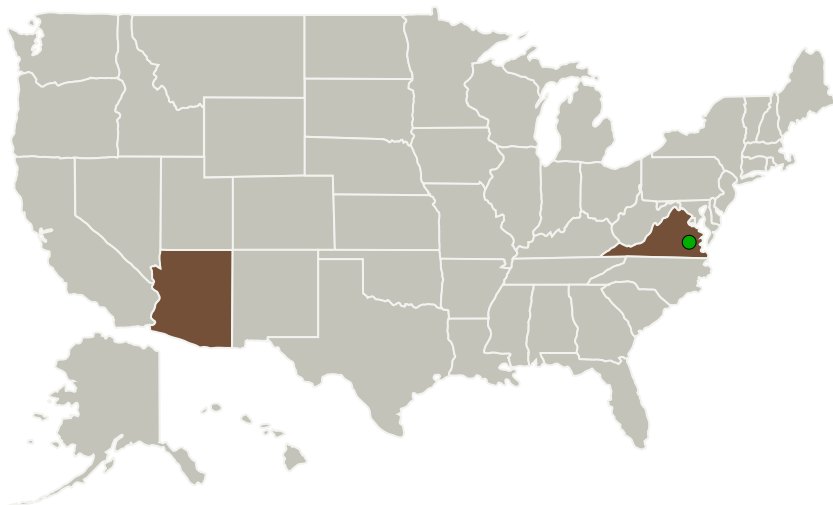
Completed Technology Project (2013 - 2016)



Project Introduction

In this proposal, we propose to demonstrate and build a widely tunable, narrow linewidth, single frequency fiber laser near 2.05 micron by developing an innovative Ho-doped single mode fiber. Such near 2.05 micron fiber laser is needed for coherent lidar and interferometric fiber sensing. Based on our successful demonstration in Phase I, our newly developed Ho-doped fibers have the capability of single frequency fiber laser operation in a wide spectral range from 2040nm up to 2100nm. In Phase II, we will further optimize our innovative Ho-doped single mode fiber, develop a new laser cavity design for fast and broad tuning, build a deliverable prototype laser unit with wide mode-hop-free fast tuning to NASA.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
AdValue Photonics, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Tucson, Arizona
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



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Primary U.S. Work Locations

Arizona

Virginia

Images



Briefing Chart

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(<https://techport.nasa.gov/image/128833>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Organization:

AdValue Photonics, Inc.

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

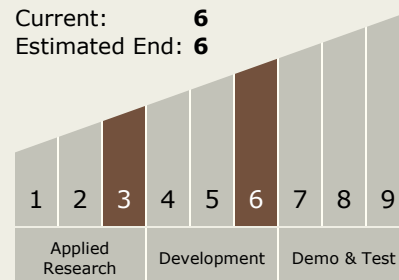
Carlos Torrez

Principal Investigator:

Shibin S Jiang

Technology Maturity (TRL)

Start: 3
Current: 6
Estimated End: 6



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System